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the sexual division of labor in Kofyar agriculture

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Many different theoretical and methodological approaches have been applied to identifying the principal determinants of the sexual division of labor in agriculture. These have included evolutionary perspectives (Baumann 1928; Boserup 1970); universalist or cross-cultural analyses (Burton and White 1984; Burton and Reitz 1981; Burton et al. 1977; Ember 1983; White et al. 1981); studies that emphasize the role of history, politics, and culture (Guyer 1980, 1984, 1988; Linares 1981, 1985); and models of political economy that see male expropriation of female labor as fundamental to the gendered division of labor within the household (Carney and Watts 1990; Folbre 1982). What seems to be emerging from a variety of these approaches is some consensus around two related generalizations: (1) there is a nearly universal difference in the agricultural work routines of men and women; and (2) women have more limited means than men for mobilizing labor. In this article we re-examine both of these propositions using the results of a yearlong labor allocation study among a group of Nigerian farmers, the Kofyar. In our view, the consensus in the literature is ill founded, based on inadequate data on the actual day-to-day activities of men and women and on a lack of conceptual clarity about the dynamics of household production and distribution under agricultural regimes differing in the nature and degree of intensity.

Over the past 35 years, the Kofyar agricultural system, which was highly intensive in the early 1960s, went through an extensive phase during expansion into a frontier area; by the 1980s, it had intensified once again (Netting 1968; Netting et al. 1989; G. D. Stone et al. 1990; G. D. Stone et al. 1984). In the hills of the Jos Plateau of central Nigeria, the Kofyar practiced subsistence agriculture with terracing, manuring from stall-fed goats and compost, intercropping, and arboriculture. Their small homestead farms of one to two acres were cultivated by nuclear or polygynous family households averaging 4.5 people. Kofyar women were full contributors to farm activities and generated their own produce through small-scale independent farming. By the early 1950s, the Kofyar, both men and women, had begun to migrate, at first seasonally, into a largely vacant area south of the plateau where more extensive methods could be used for cash-cropping yams and grains (Netting 1968). By 1984, frontier settlements were permanent, and the Kofyar had reintensified their farming, spurred both by a declining land base and by market incentives. Average household size in the plains had grown to 8.4

Previous models of the sexual division of labor in agriculture have suggested that men and women universally have distinctive work routines and differential access to agricultural labor. This article argues that these generalizations will not always hold true and illustrates this point with the particular example of intensive agriculture dependent on manual labor. An analysis of detailed labor data from the Nigerian Kofyar support this contention. [sexual division of labor, agriculture, agricultural intensification, control and access to labor, Nigeria]

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people through the addition of wives and increasing rates of multiple family households. Women had increased their production and sales of yams, rice, and groundnuts (M. P. Stone 1988a, 1988b).

Detailed labor data were collected from a sample of Kofyar farming in the frontier in 1984, and analysis of these data portrays a division of labor in which men and women have very similar work routines and in which women have considerable power over the allocation of their own labor and call on the labor of others.

the fundamentals of the debate

Most portraits of gendered work routines in agriculture have depicted women as tending to work individually and without labor peaks, and men as tending to work in groups with more seasonal variation in task and time input (first described by Baumann 1928; more recently summarized by Guyer 1984, 1988). This has been confirmed as a general pattern by cross-cultural scholars (Burton and White 1984; Ember 1983; White et al. 1981).

This pattern has been attributed to a number of factors, including the cultivation requirements of different crops (as we discuss below) and, most important for our purposes, to the differential access to labor by men and women. Women's lesser control over the labor of others (whether individual, group, or wage, and whether household or extrahousehold) is cited as a principal determinant of these distinctive yearly and daily work routines (Guyer 1984, 1988); this lesser control is also thought to set ultimate limits on women's agricultural production. Observers describe women as especially disadvantaged in their relative access to the more "public" forms of labor (communitywide or interhousehold groups and wage labor) and argue that women's labor is argued is increasingly expropriated by men upon entry into the market (e.g., Etienne 1980; Fortmann 1982; Jones 1986).

Our data suggest that previous discussions have oversimplified notions of "control" over labor, conflating it with qualitatively different kinds of access to labor. We stress the need to examine the intricacies of specific agricultural calendars to understand the reciprocities and trade-offs between male and female labor and male and female production (see also Saul 1989). In contrast to others who emphasize processes that cut across and through households (Guyer and Peters 1987), we stress the degree of cooperation and overlapping interests that best characterizes the Kofyar household.

alternative approaches

Baumann (1928) speculated that the basis of gender differences in work routines was that female labor was best suited to the hoe cultivation of root crops conducted without peak periods of labor input. The farming of grains, by contrast, required more intensive methods and the involvement of men. His model has an evolutionary thrust, with female farming representing an earlier stage of development than male farming, as well as an environmental basis, with differences in crop ecology determining the division of labor (see also Boserup 1970; Meillasoux 1981[1975]; White et al. 1981).

Cross-cultural scholars have postulated that the reason for the association of women with root crops and men with cereals is that "cereal crops require more secondary processing (winnowing, grinding, etc.) than do root crops, and . . . the high involvement of women in the secondary processing of cereal crops prevents a high involvement in the production in the field" (White et al. 1981:826). Furthermore, women are said to be better able to organize their productive labor to match the requirements of root crops than of cereals because agricultural regimes "that require medium labor inputs with no periods of peak demand are more compatible

with the child rearing constraints on women's activity than are regimes which require sudden mobilization of large numbers of people" (White et al. 1981:827; see also Brown 1970; Burton et al. 1977; Murdock 1949:7-8). Women are better suited to short, interruptible tasks near the home because of their greater responsibilities for domestic work and childcare.

This deterministic and naturalistic model has received considerable criticism, mainly from Guyer (1984, 1988), who has argued that "the fundamental problem with the root/cereal distinction is that labor organization differs at least as much within those two categories as it does between them" (1984:373). She cites two classic studies of yam-producing societies (Bohannon 1954; Forde 1964) that depend for certain tasks on male labor applied in large groups. Guyer (1984) has also challenged the notion that women's childcare and domestic responsibilities can explain differences in their agricultural production or work routines. There are too many examples of women working long hours in the fields with their children (Bay 1982), no evidence that childcare keeps women from farming (Guyer 1984), and indications that women with children may be more active in agricultural production than their childless counterparts (M. P. Stone 1988a).

Guyer's alternative approach construes the sexual division of labor in agriculture as a "socio-political process which has varied historically" (1983:7). She argues that the different work routines of men and women are due to "women's relatively limited institutionalized means of mobilizing labor" (Guyer 1984:381; see also Whitehead 1984; political economists view the sexual division of labor within the general framework of "patriarchal politics"; see Carney and Watts 1990:229).¹ Women, with their limited social power, are more dependent than men on their own labor applied individually and cannot gain access to group labor as readily as can men. Guyer (1980, 1984) illustrates this with a comparison of the cultivation patterns of Yoruba men with those of Beti women.

As a more useful categorization of crops than the contrast of root and cereal, Guyer suggests that of "indigenous" and "introduced," thereby attending to historical and social processes. The introduction of new crops prompted a renegotiation of social and labor relations: "the indigenous staples are characterized by complex and ritualized labor organization whereas recently introduced crops tend to be individuated, sex-specific and secular" (Guyer 1984:374). Linares (1985) found that, among the Jola, even such recently introduced crops as groundnuts have derived symbolic and institutional power from the policies of the colonial governments. For Guyer and Linares, it is women's lesser social and political power that determines which crops they grow and how they grow them, rather than the technical characteristics of the crops themselves.

The example Guyer uses to refute the pragmatic explanation is nonetheless inconclusive. She cites Haswell's (1975) study in the Gambia, which documents a process of increasing individuation of production in the change from one indigenous cereal (millet) to another (rice). The difference between indigenous and introduced seems not to hold. She concludes, "This suggests that it is not the crops themselves which determine domestic labour allocation, but historical processes [she suggests warfare and insecurity, raiding or taxation by expanding states, and so on] having some generality from one region to another" (Guyer 1984:375). None of this seems conclusive, however, and distinctions that seem to have explanatory power in one context have none in others. One critical distinction Guyer neglects is the role of agricultural regimes (whether intensive or extensive) in differentiating the labor of men and women. The extensive cultivation of the Beti and Yoruba differs predictably, in our view, from the intensive cultivation of the Gambian rice farmers.

agricultural intensification

Agricultural intensification is the substitution of labor or capital for land: to increase, or to check the decline of agricultural output, the investment per unit land and per unit time is raised.

Because intensification almost always means lower marginal returns, farmers do not accept it lightly; its most common causes are a dwindling land base and strong incentives from the market. Although none of the definitions of intensification *require* change in agricultural technology, all emphasize it (Boserup 1965, 1981; Netting 1993; Turner and Doolittle 1978). For instance, Boserup's (1965) original discussion underscored how fallow shortening prompts the change from the dibble stick to the hoe and then to the plow

Defined in this way, "intensification" can be treated as a unitary phenomenon, crosscutting environment (Boserup 1965) and degree of commercialization (Turner and Doolittle 1978); again, in this way, its effects on the sexual division of labor have been studied (Boserup 1970; Ember 1983). Yet understanding the sexual division of labor in agriculture, and why groups such as the Kofyar diverge from the patterns reported elsewhere, requires that we distinguish between different modes of intensification. When it is driven entirely by human labor, intensification appears to affect sex roles in production differently from when it is based on change in agricultural technology.

We use the Kofyar as an example of an intensive system driven by human labor, typified by a limited tool kit (mainly the hoe) and a roster of indigenous techniques and knowledge (including intercropping, manuring, terracing, and ridging). We realize, of course, that the Kofyar system is in many ways specific to a Guinea savanna environment, but examples of labor intensive systems exist elsewhere as well (e.g., the wet rice systems of Asia; see Geertz 1963).

Most studies of the effects of intensification on gender roles have emphasized technologically based intensification and have documented the decrease in women's contributions to farming with intensification (Boserup 1970; Burton and White 1984; Ember 1983). Boserup's (1970) discussion of the effects of agricultural intensification on women, for example, focuses on the transition to plow agriculture, and her description of African agriculture before the introduction of the plow is of *extensive* agriculture with high inputs by women, low population densities, simple technology, and communal land tenure. We consider this distinction to be critical. Merging different forms of intensification has blurred a key distinction for debates about the sexual division of labor.

It is not surprising, therefore, that most analysts have stressed the divergent work routines of men and women, given the predominance of extensive agricultural systems in Africa and the bias toward technological forms of intensification in the literature on the sexual division of labor.

The clearing and burning of land in extensive agricultural systems do tend to be performed by men (see, for example, Bledsoe 1976; Clark 1975; Guyer 1980; Hill 1975; Pala Okeyo 1979), and there are indications that extensive agricultural systems are typified by a marked division of labor by gender (M. P. Stone 1988a, 1988b). Similarly, ploughing and the construction and maintenance of irrigation channels also seem to be dominated by men. Indeed, where agriculture is intensified through technological change, men's relative inputs do seem to increase, men's and women's work routines became increasingly differentiated, and men do seem to benefit disproportionately from agricultural production and sales (Boserup 1970; Mook 1976; Oboler 1985; Weil 1973).

The introduction of the plow has been shown to decrease the time women can devote to fieldwork in relation to men. Women are described as performing the "day-in, day-out" tasks of weeding, feeding animals, and cooking, while men specialize in the more physically demanding, bottleneck tasks of field clearing, plowing, and harvesting (Boserup 1970; Burton and White 1984; Ember 1983). When combined with such factors as colonial policies favoring male farmers, men's involvement in and control over the agricultural enterprise increase. Extensive agriculture and technologically intensive agriculture thus seem to share the characteristic of distinctive labor routines of men and women in agriculture.

We contend that when the form of intensification is increasing overall labor inputs (G. D. Stone et al. 1990), male and female work routines are typified more by their striking similarities

than by their differences. We do not, however, believe that there is any deterministic relationship among technology, land availability, and labor organization. Our understanding of the form of intensification that emerges in any situation does not depend on population pressure or ecological determinants. It does not assume any evolutionary sequence. Other culturally distinct ethnic groups that have colonized the same frontier as the Kofyar, such as the Tiv, maintain more extensive agricultural regimes (G. D. Stone 1993). The particular form of intensive farming the Kofyar were practicing in the plains in 1984 was, we believe, a result both of the habits of their previous intensive cultivation in the land-scarce hills and of the motivations of an expanding population bent on producing a surplus for the market economy.

We also recognize that there is no strict boundary between intensive and extensive systems. Some of the neatness, of course, disappears when one takes into account the variety of intermediary forms (see Ruthenberg 1980), factors such as male labor migration resulting in situations where women are forced to assume all farming tasks (see, for example, Barnes 1983 or Pala Okeyo 1979), and the introduction of alternative machinery, credit, and extension education in new technologies which tend to go disproportionately to men (see Mook 1976; Staudt 1975–76). Although this variability certainly complicates our task, we believe the simple contrast we are drawing will still hold true.²

In this article we examine the organization of male and female work among the Kofyar and analyze women's access to labor. We first describe the Kofyar agricultural system overall, illustrating the uniformities in male and female inputs. We then describe women's independent production, comparing the ways women organize and mobilize the labor for their own farming as compared with the ways men organize labor for household production. We also examine the specific contention that women have limited access to labor, especially group labor.

the Kofyar

The Kofyar number around 60,000, with an estimated 25,000–30,000 now living in the Benue valley south of their homeland in the escarpment of the Jos Plateau (Netting et al. 1989). Population densities in the frontier area, though not as high as had been the case in the traditional homelands, had increased over the 35-year period of the migration.³ Cultivation is all manual, with no animal traction or farm machinery. The vast majority of labor is locally marshalled and nonwage (wage labor, including local workers as well as migrant labor from outside the Kofyar area, amounts to only 1 percent of the total labor input [G. D. Stone et al. 1990]).

Each Kofyar household,⁴ under the direction of a household head who is almost always male, devotes the majority of its land and labor to the production of yams, millet, sorghum, and rice. Women, and young males who are not household heads, also cultivate crops independently, usually on land allocated to them by the household head.⁵ Women primarily grow yams, groundnuts, bambara nuts, and rice as their independent crops, with secondary crops of cocoyams, sesame, and cereals. Whether produced by the household or by individuals, most yams are sold, while other crops function as both subsistence and cash crops. Individuals retain control of the income from their production. Household incomes are controlled by the head, although a significant portion of that income is used to benefit household members (e.g., for schooling, medical care, purchased foods, taxes, and bride wealth).

Women's independent production in no way rivals the scale of male household production. Whereas almost 70 percent of all women produce independently of their households, the overall incomes derived from the sale of individually grown crops accounts for around one third of total household sales. Women produce less, but have many fewer demands on their incomes than do male household heads (see Netting 1968:220; M. P. Stone 1988a, 1988b), have other sources of income such as animal raising and beer brewing, and have their basic subsistence, medical, and clothing needs met by their household heads. The proportion of female incomes

that are disposable is thus much higher than that of household heads. Some Kofyar women have become quite prosperous, owning motorcycles and livestock.

Men and women are in many ways partners, if unequal partners, on the household fields. Both derive subsistence and some monetary benefits from these fields, although control of the income is in the hands of the male household head. It does not make sense, in the context of this particular farming system, to speak of household level and independent level production directly “competing” for land and labor; women have a stake in both.⁶

Labor is not really “controlled” by one person or another; the labor that male household heads mobilize on household fields benefits the entire household. Similarly, although the household head can mobilize the neighborhood women to brew for a work party he is hosting, the beer production is supervised by the women of his household, and the brewing debts accumulated may be cashed in by the women themselves.

Rather than modeling the household either as a locus of competing interests and constant negotiation between men and women or as a fully cooperative social unit with a joint utility function (Guyer 1981; Yanagisako 1979), we stress the interplay of both overlapping and competitive interests within Kofyar households. These negotiations occur between coresident women as well as between men and women. Not all Kofyar women produce independently, and regular differences in scale of independent production by marital and childbearing status, age, and residence have been noted elsewhere (M. P. Stone 1988a and 1988b).⁷

agricultural labor

The present study is based on time allocation data spanning the agricultural year 1984–85. Fifteen sample households in three rural neighborhoods were chosen for a labor diary survey. Seven local enumerators who were resident family members recorded the daily work time, crop, task, and form of labor for each adult member of their own households and, in each case, for a neighboring household as well. The number of adults being monitored varied, but averaged 53. A total of 50,000 labor bouts were recorded. The daily returns were checked once or twice each week for internal consistency and to elicit additional information. Two provisos must be made in relation to women’s labor: (1) enumerators reported tasks that lasted an hour or longer—as a result, there is underreporting of domestic, largely female, tasks; and (2) as no child labor was measured, we may actually underestimate the amount of labor available to women (see Bradley 1987; Nag et al. 1978). The data base is rich, however, in group labor information, including the size and nature of each group, and the identity of the host, task, and duration.⁸

The Kofyar organize their agricultural labor in two basic modes: household and extrahousehold. Household labor includes individual labor—individuals working alone on their own fields or on the household fields—as well as the members of a household working side by side on household fields.⁹ Extrahousehold labor includes a variety of forms of group labor including small exchange labor groups (*wuk*), larger festive labor parties (*mar muos*), and specialized labor groups organized along gender lines (*mar shar*, literally “farming friends”) or for special purposes (*zumunta*, church benefit).

Wuk are voluntary membership groups that take turns working on different members’ farms. They average 10–15 people per meeting, and strict reciprocity is expected.¹⁰ There are household *wuk* and individual *wuk*. Women contribute to household *wuk* as representatives of their households and belong to individual *wuk* as full members. The labor of individual *wuk*, most commonly the *wuk* of young men, is sometimes sold. These *wuk* of young men may also specialize in certain strenuous tasks, such as yam heap making, and so meet only during certain seasons. Female *wuk* work almost exclusively on each other’s individual fields. Although *wuk* may cross some of the boundaries between wage labor groups and social groups, they represent

an important form of institutionalized extrahousehold labor available to both men and women. Wuk may perform any task.

Festive labor parties (mar muos) (Moore 1975; Saul 1983) bring together larger groups of neighbors (typically, 30–60 workers, but they may exceed 100). The group is rewarded with millet beer for its work, thus accounting for the name mar muos, “farming for beer.” Mar muos work on both household and individual fields, although household-level mar muos are both more frequent and larger. Mar muos are ideally suited for bottleneck tasks such as harvesting and yam heap making, which must be accomplished within narrow ecological windows and/or which have simultaneous labor demands (G. D. Stone et al. 1990:12). Mar muos also allow “banking” of labor since the cost of hosting such an event (beer) is distributed across the previous farming season (millet cultivation) and the five days preceding the labor party (brewing). Given female specialization in beer brewing, this observation has special implications for the division of labor by gender. Women do not just contribute brewing labor, in contrast to other groups (cf. Donham 1990); they participate in the farm work as well.

A third form of group labor brews the millet beer for mar muos. These loosely reciprocal groups of neighborhood women also brew beer for sale during the dry season and for other social events. During periods of labor bottlenecks, when mar muos are frequent, women may be involved daily in brewing activities. Brewing for mar muos is essential to Kofyar agricultural production. In fact, when husband-wife disputes become serious, neighbors will often intervene for the stated purpose of assuring that the neighborhood will not lose the wife’s brewing labor.

More recent additions to the group labor repertoire are specialized labor groups primarily organized by women. One group of about 12 women in a neighborhood organized a mar shar and hired themselves out as a work group. They primarily worked on the fields of one of their husbands, although they would also work on one of their own fields at a reduced rate. In 1984–85 they met as often as twice a week depending on other demands on their time. The money they earned was pooled and used for an end-of-year party: a large batch of beer was brewed, meat was purchased, and the group collectively bought matching clothing. This group performed virtually any task, although they specialized in weeding. They also worked during the dry season (carrying mud blocks for building), but met much less frequently. These groups combine the functions of a social group, a way of mobilizing extrahousehold labor on their own and other fields, as well as a small savings society.¹¹ Men, especially young males who are not household heads, belong to similar all-male labor groups that specialize in certain tasks and that are paid at a higher rate than the women’s groups.

Finally, other labor groups are organized around fundraising efforts, such as church groups (zumunta), which may be hired to do fieldwork on particular farms. Groups of neighbors cooperate on community improvement projects (such as road maintenance or school building), and still other ephemeral groups work in fields for pay in meat or money.

The Kofyar did not perceive any one form of group labor as more advantageous overall than any other; they felt that each form was best suited to particular tasks, to particular field sizes, to particular times in the agricultural calendar, and to particular crops and combinations of crops. The Kofyar did state a preference for group labor over wage labor on grounds of relative cost, quality of work, dependability, and numbers of workers available for time-dependent tasks.

Women not only participate in every form of group labor but monopolize some forms and also tap every form for cultivation of their independent crops. The relative importance of these various forms of group labor and men’s and women’s participation profiles will be discussed below.¹²

overall patterns of the Kofyar sexual division of labor

Kofyar women are full contributors to the agricultural labor process (G. D. Stone et al. 1990). Kofyar women’s labor is integral to both the hill subsistence and plains cash crop agricultural

production. In the homelands, men and women, working side by side, performed most agricultural tasks on household fields. Very few tasks were gender specific, although men and women might perform complementary activities on the same task: for example, men prepare ridges while women follow behind inserting seedlings. The interchangeability of male and female labor has largely persisted in the plains, with some few exceptions (discussed below). This full involvement of Kofyar women in farming has contributed significantly to overall increases in production, especially in contrast to Northern Nigerian Moslem groups, such as the Hausa, whose women are largely secluded (G. D. Stone et al. 1990).

The average total yearly hours put into agriculture, including brewing for agricultural purposes, by a female in our sample was 1,400 as compared with 1,554 by a male (an overall average of 4.4 hours a day). Women were thus contributing almost half of all farm labor (see Table 1).¹³ The overall pattern is of strikingly equal input by workers undifferentiated by gender (Figure 1). The average difference between male and female inputs into agricultural work is rarely more than half an hour a day (Figure 2).

These total yearly hours and daily inputs depict a labor-intensive agricultural system with periods of bottleneck tasks and intense labor requirements (see G. D. Stone et al. 1990). The agricultural calendar extends from the onset of the rains in March, when the millet and the sorghum are planted, until the end of the yam harvest in February, leaving little slack during the dry season. There are two main bottleneck periods: (1) the early spring millet planting (which conflicts with the ridging¹⁴ for the cereals); and (2) the August millet harvest and storage, which must be finished before the return of the rains, and when yam and sorghum weeding are

Table 1. Relative contributions of men and women to agriculture by crop and task (average total hours including agricultural brewing).

	Women	Hours	Men	Percent female
All agricultural hours	1400		1554	47
All yam labor	488		665	42
Field clearing	17		23	43
Heap construction	52		170	24
Weeding	214		231	48
Planting	72		91	44
Harvesting	110		150	42
Beer	22		0	98
All cereal labor	532		653	45
Field clearing	29		37	44
Ridging	151		203	42
Planting	87		109	44
Weeding	135		141	49
Harvesting	87		129	40
Storage	20		31	39
Other	23		3	88
All rice labor	83		87	49
Field clearing	2		2	48
Weeding	23		19	55
Harvesting	15		16	47
Other	43		50	46
All groundnut labor	172		32	84
Ridging	1		4	21
Planting	21		2	93
Weeding	41		3	94
Harvesting	67		10	87
Other	42		13	76

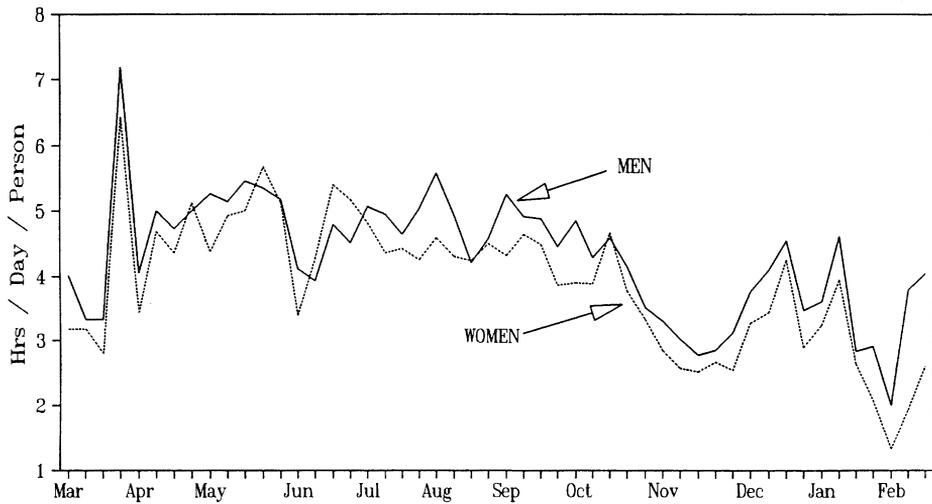


Figure 1. Comparison of men's and women's average daily agricultural labor inputs throughout the year. Included are all tasks directly related to growing and storing crops, but not the processing of crops for consumption or sale. Beer brewing labor is included if it is known to have been in preparation for an agricultural work party. Data were collected on 15 households in 3 unguas, with a weekly average sample size of 53 adults.

competing for labor. Average labor inputs vary from a daily high of 7.4 hours during millet planting to a low of 2.8 hours in the dry season (G. D. Stone et al. 1990:10).

male and female labor by crop and task Some differences exist in relative inputs by men and women by crop and task. Male labor is somewhat more important to the field cultivation of yams than female (see Table 1), largely because of male specialization in heap making. Differences in men and women's overall contributions to cereal production overall are not sharp.¹⁵ There is somewhat greater male involvement in the heavy work of ridging and the harvest and storage of the grains. As with yams, however, women's equal involvement in weeding and significant contributions to field clearing and planting keep overall relative

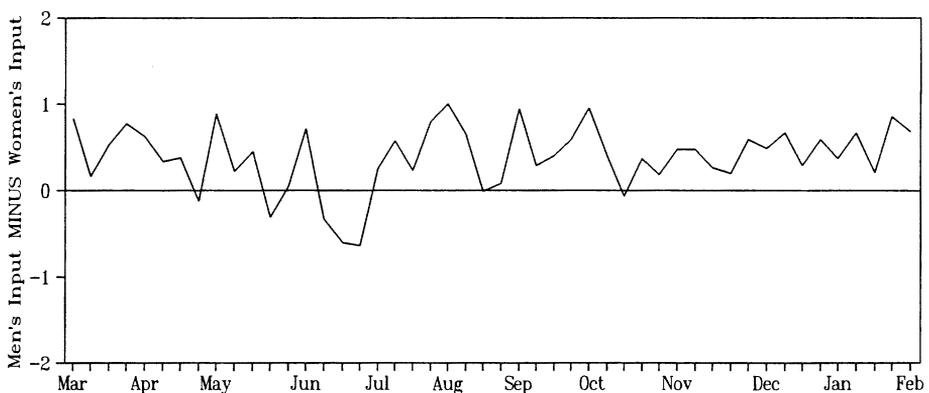


Figure 2. Differences in men's and women's average daily agricultural labor. Women's weekly averages are subtracted from men's; thus, positive values show greater inputs by men and negative values indicate greater inputs by women.

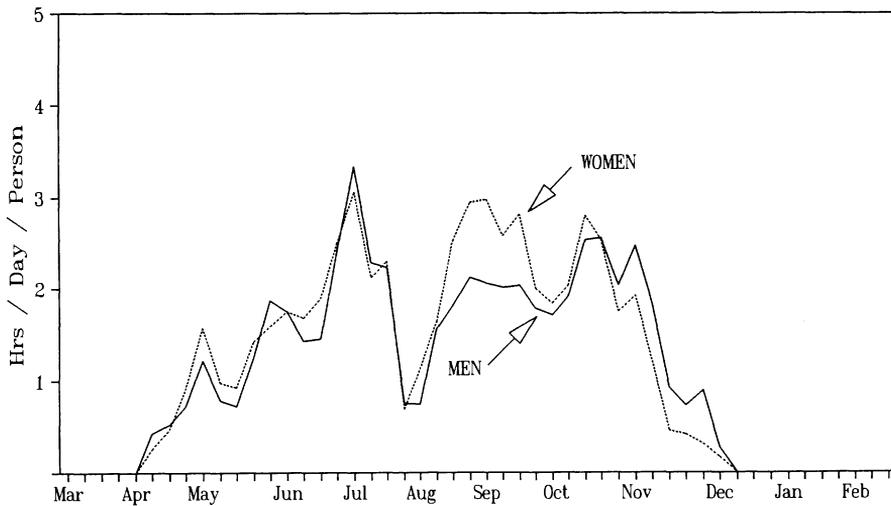


Figure 3. Comparison of men's and women's average daily labor inputs into weeding crops (all crops lumped).

contributions to cereal cultivation quite equal. A similar pattern holds true for rice cultivation as well. It is worth noting that distinctions between the more recently introduced cash crops (yams and rice) and the primarily subsistence crops that were cultivated in the hills (millet and sorghum) do not seem to explain any differences in the labor of men and women. Groundnuts, a predominantly female crop, require relatively few agricultural hours overall. Female labor accounts for most of the work on groundnuts (Table 1), with male participation most important to ridging.

Although women do the great majority of cooking and beer brewing, men do contribute significantly to tasks such as wood gathering, crop processing, and clothes washing, do about half the work of hut construction, and occasionally fetch water. Overall, women work somewhat longer hours than do men,¹⁶ a circumstance explained by their full involvement in agriculture as well as their added domestic duties.

Our data on nonagricultural work are not precise, but it is clear that Kofyar men and women are alike working hard overall. Men and women are contributing almost equally to most tasks on most crops at all times of the year. Even for tasks that some have argued are better suited to women, such as weeding (which is an interruptible task), male and female inputs are remarkably similar throughout most of the year (Figure 3). For bottleneck tasks such as harvesting, which others would argue favors the group labor of men, women's contributions are high and follow a profile very like that of men (Figure 4).

seasonal complementarities in male and female labor Figures on weeding and harvesting show some seasonal variation in relative inputs by men and women. Most notably, women spend almost an hour more a day weeding than do men in August and September. Women weed yams, cereals, and groundnuts while men are occupied with the single task of constructing yam heaps. During the peak mounding season (August–October) men put in 2.5 hours a day making heaps, women less than one hour (Figure 5).¹⁷ Women spend half an hour a day during this period brewing beer to sponsor festive labor parties for yam mounding. Although the average total hours women brew for yams is not great (22 hours out of a total of 488 hours that they devote to yams), no work party can occur without women's brewing, and much of the labor for yam heaping is marshalled through work parties (G. D. Stone et al. 1990:18). During

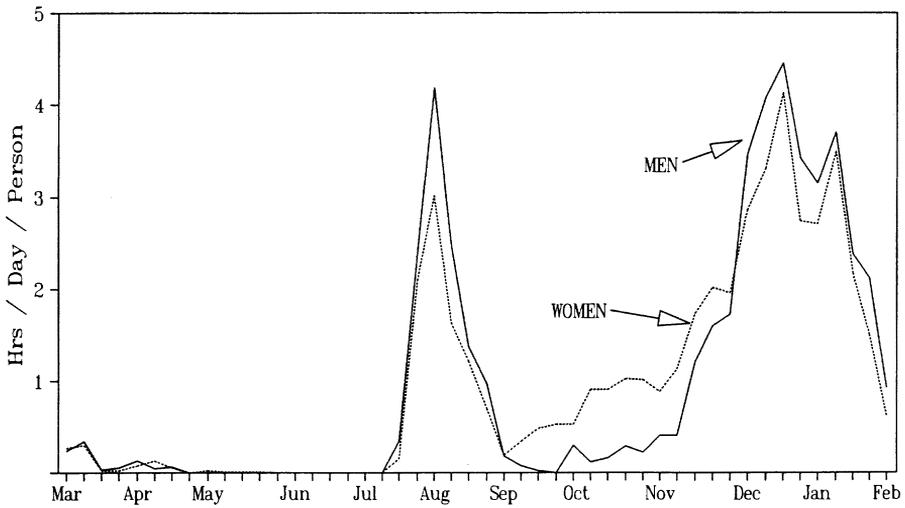


Figure 4. Comparison of men's and women's average daily labor inputs into harvesting crops (all crops lumped).

this period and for this set of tasks, there are several complementarities between male and female labor. The construction of yam mounds is an especially arduous task that men can do more quickly than women. Women brew in order to attract this male labor and also take on more of the burden of other agricultural tasks on yams and other crops.

The figure on harvesting (Figure 4) also shows slight seasonal differences: men do an average of an hour more a day harvesting the millet crop in August, spend less time than women harvesting groundnuts and cowpeas in September and October, slightly surpass women's inputs into sorghum harvesting in December, and spend an hour more a day than women on the yam harvesting in February. The millet harvest and storage are bottleneck tasks that must be done

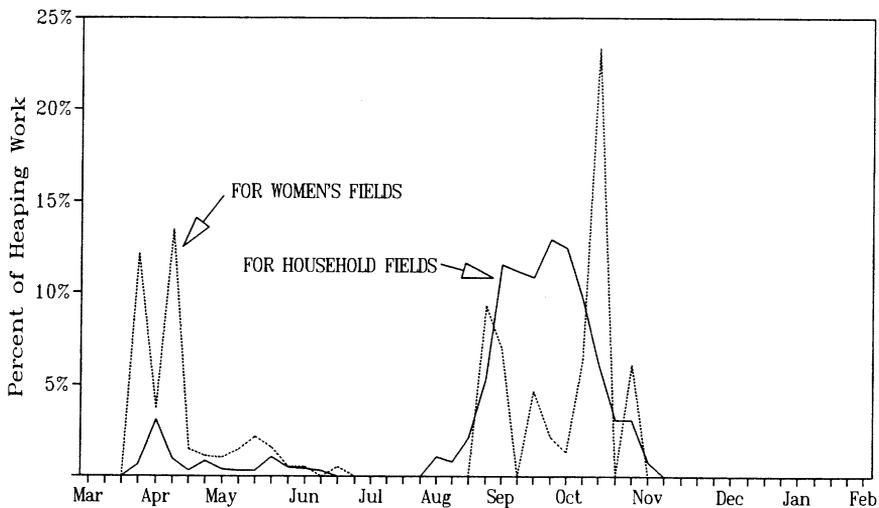


Figure 5. Differences in men's and women's average daily labor inputs into yam, separated by task. Differences are calculated as in figure 2.

quickly to avoid the damage of the late rains. Although most of the harvest is done by the household, the storage depends on group labor underwritten by women's brewing. Men's slightly higher input into the harvest and storage of the two principal subsistence crops may also reflect the household head's greater responsibility for, and control over, the basic provisioning of the household. It is his responsibility to feed the household during the coming year and his prerogative to sell surplus millet, and the detailed knowledge of quantity and quality that come from direct participation in harvesting and storage may encourage greater male involvement.

Women also contribute less than men to the yam harvest. As the sellers of the yams, men may again need detailed knowledge of the harvest. Women are meanwhile busy brewing for sale during the period of the yam harvest. Brewing is a major cash earner for women, and social beer drinking is a frequent dry-season activity for both men and women. Commercial beer brewing continues into the following spring even after the rains begin and the agricultural push has started.

Although inputs by men and women are quite even overall, once we break labor down by gender, task, and crop across the agricultural year, we find no simple gender division of labor. Two implications of the preceding discussion are worth emphasizing. The first concerns the overall high inputs made by all Kofyar into agricultural production. If less labor were required in the system overall, the patterns of male and female labor would undoubtedly diverge. The second is that women still clearly have choices about how they will spend their productive time. Women's help in yam harvesting would certainly be useful, but they opt to spend that time brewing for their own profit. This autonomy of women will be further explored below in contrasting household with women's independent agricultural production.

work routines and women's access to labor for independent production

Do women organize their work differently than men? Do women tend to work more individually and less in groups, inside the household, and with fewer seasonal variations? These questions concern women's participation in the agricultural labor enterprise. Are women disadvantaged in their access to labor for the cultivation of their own crops? What kinds of labor can women tap for their independent production? Do they have access to labor at different times of the year than men? Are men in effect expropriating the labor of women? These questions concern women's access to and control of agricultural labor.

household vs. extrahousehold Our data show that Kofyar women's labor is no more confined to the household than is men's (Table 2). Both men and women spend about three quarters of all their agricultural labor time working within their households. Most of the men's time within the household is spent working on household fields (89 percent), leaving little time for working on independent production within the household. Women also spend the majority of their household labor on the household fields (68 percent), but significantly less than men, which leaves them with one third of their household labor time to spend on independent production within the household. Most of their independent production time is spent on their own fields and not on the fields of other independent producers within their households (Table 1).

group vs. nongroup Women do divide their work between types of extrahousehold group labor differently than men. Men spend significantly more time on average than do women attending *mar muos* (Table 2). Although their participation in *wuk* is almost equal, women spend the balance of their work group time participating in alternative group events such as brewing and meetings of their women's association or church group.

Table 2. Comparison of men's and women's relative time input by category of producer and work group type (column percentages—all agricultural labor).

	Women	Men
Own household	78.2	73.3
For household	67.5	88.7
For self	27.5	7.8
For other individual	5.0	3.5
Extrahousehold	22.5	24.5
For household	65.3	62.0
For individual	21.9	18.5
Unknown beneficiary	12.8	19.5
Other	1.6	2.2
Work group		
Wuk	26.2	28.9
Mar muos	48.2	63.8
Other	25.6	7.3

Women also devote a higher proportion of their group labor to other women's independent production than do men. (Table 3 shows, for example, that women spend 24 percent of their wuk time working on other women's fields, men only 10 percent.) Men spend the majority of their time in groups working on the household fields of their male neighbors.

Slightly more of the labor for women's independent farming is provided by group labor (27 percent) than for household farming (23 percent; see Table 3). Women use both mar muos and wuk at approximately the same rate as do households. Overall, women's independent production, rather than being organized around individual women's labor, draws as heavily on group labor as does the production of households.

women's overall labor portfolio Overall, 18 percent of all agricultural labor is spent on women's fields (Table 3). Most of this labor comes from women working on their own fields; very little comes from other individuals within the household, and the remainder is in the form of extrahousehold group labor comprised of both male and female workers (Table 2). Men account for only 6 percent of the work on women's crops, and most of that labor comes through groups. Twenty percent of all hours spent in wuk, and 17 percent of all hours spent in mar muos by both men and women, however, are devoted to women's production.¹⁸

So, although women cannot claim individuals' labor as households can, they can, and do, rely on group labor as much as men. This is true even though women spend proportionately no more time working in groups than do men (Table 3).¹⁹ Women's principal advantage in attracting group labor is their brewing skills, which they trade for male strength to accomplish specific physically demanding tasks. While men contribute little overall to the women's groundnut cultivation, for example, they constitute 79 percent of the labor force for ridging, a relatively arduous task for which women sponsor mar muos. To ensure access to this labor, women accumulate brewing labor debts with each other; they can cash these in for their own farming or for commercial brewing.²⁰ Women are, incidentally, no more "altruistic" than men in working on others' farms. Of women's total budget for independent production (33 percent of their overall time), 13 percent is spent on other women's farms. Men, by contrast, spend 27 percent of their time working for other households.

seasonal variation Agricultural tasks do, however, have more or less optimal times, and the last farmer in the neighborhood to host a beer farming group for a time-dependent task may be

Table 3. Comparison of organization of labor for men's and women's production.

	Nongroup	Wuk	Mar muos	
Row percentages (all agricultural labor)				
All workers				
Women's fields	65	23	12	
Household fields	72	13	15	
All	71	15	14	
Women workers				
Women's fields	69	24	6	
Household fields	70	16	13	
All	70	19	11	
Men workers				
Women's fields	33	18	50	
Household fields	74	10	16	
All	72	10	18	
	Nongroup	Wuk	Mar muos	All
Column percentages (all agricultural labor)				
All workers				
Women's fields	20	33	18	21
Households fields	78	64	81	76
Unknown	2	3	1	3
Women workers				
Women's fields	33	42	20	33
Household fields	65	55	79	64
Unknown	3	3	1	3
Men workers				
Women's fields	3	11	17	6
Household fields	95	86	82	92
Unknown	2	3	2	2

disadvantaged. Are women less likely than men to sponsor group labor events for their independent production at the peak periods for bottleneck tasks?

Let us reconsider yam mounding, because yams not only present the most scheduling challenges of any crop but also exhibit the greatest seasonal differences between men's and women's labor. The preferred time to make yam heaps is between the August millet storage and the end of rains in October when the ground hardens (G. D. Stone et al. 1990:17). Some heaping is delayed until the following April, but it then interferes with the necessary planting and ridging of the sorghum/millet fields. Not only are fewer hours per day devoted to yam heaping during the spring, but so, proportionally, are many fewer group hours.

Figure 6 shows that most of the household yam heaps are made during the optimal September–October period, whereas women's yam heaps are mostly made either during the early spring rains or just before and after the peak period in the fall. The work of ridging the household cereal fields must be done early in the season, and only 9 percent of all yam heaping work occurs then; meanwhile, almost 40 percent of the heaping work for women occurs in the early season. Women's independent production of cereals is minor, so this scheduling does not pose the same problem it would for household production.

Women can also hire men to build heaps. Twenty percent of the women in one neighborhood (as compared with 36 percent of plains households overall) had hired male wage laborers during the previous year. Most had hired neighboring men or even men within their own households, although a few of the more enterprising female farmers had hired migrants from outside the Kofyar area.

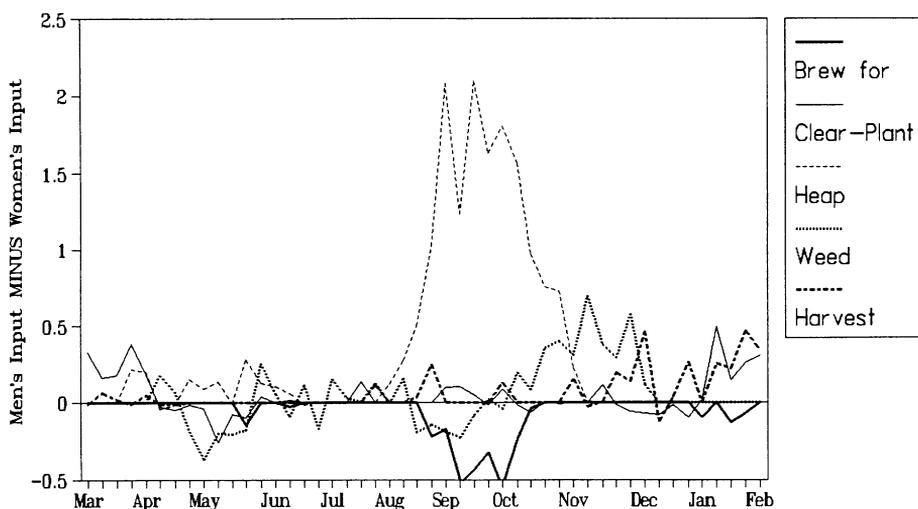


Figure 6. Comparison of labor mobilization for yam heap construction on women's fields and on household fields, expressed in percentages. For each type of field, the weekly inputs are divided by the total labor (individual and group) for yam heaping for that field type. Of labor mobilized for making yam heaps on women's fields, 39.6 percent occurs before July; 9.0 percent of the labor for household fields occurs before July.

summary The adjustments between men and women are characterized by both competition and cooperation. Although women may decrease work on their own crops during the household's agricultural bottlenecks, they are not confined to the residual periods for their own production. They continue to work on their own crops throughout the year, despite competing demands on their time (Figure 7). The fact that each woman can choose to allocate about one fifth of her agricultural labor to her own production and one third of her time to women's production overall demonstrates a considerable degree of control and autonomy over her own activities.

the example of groundnuts

Women's cultivation of groundnuts is an interesting example of the interplay of women's autonomy with their willingness to adapt their farming schedules to the needs of their households and neighbors. Women's groundnuts follow an extended calendar (also see Guyer 1984). The preparation of groundnut fields and planting extends over 19 weeks. Weeding covers 22 weeks, and the harvest begun in August is not completed until December. Women spend an average of half an hour a day on their groundnut production from March through December. Some groundnuts are interplanted with the household cereal crops, thereby reducing the need for separate field preparation and allowing the joint cultivation of several crops at once.

Groundnuts are grown by women for both subsistence and sale. Although over half of the women grew groundnuts as an independent crop, the income they derived from selling groundnuts was small when compared with that from yams. Much of the groundnut crop is eaten by the household, reflecting the rule in the hills (considerably relaxed in the plains) that women are responsible for the sauce for the meal while men are responsible for the staple porridge. The scheduling of groundnut cultivation is flexible and protracted so as not to conflict with the more pressured cultivation of cereals. Guyer (1984) proposes that this reflects the lower status of women, who tend to cultivate crops that have comparatively lower market value and

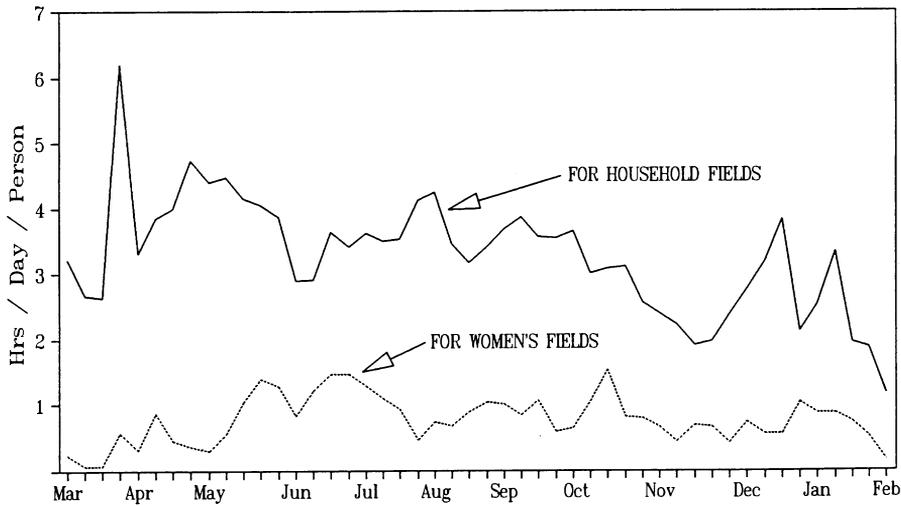


Figure 7. Differences in time spent by all workers on women's fields and on household fields throughout the year.

that do not depend on male labor. Yet women do have access to male labor when it is useful (ridging work), women do manage to maintain a quite constant average input into groundnuts even through some bottleneck periods of the calendar, and women do “donate” part of their groundnut harvest to household subsistence regardless of other pressures. Women’s cultivation of groundnuts exploits the margins and flexibility of a very full and intricate farming calendar and landscape. Although a minor crop for women, groundnuts, out of the whole Kofyar system, may best fit the “day-in, day-out” categorization of women’s labor presented in the literature. As minimal as the conflicts it poses with the household production system and calendar may be, however, even this crop reflects both the costs and the benefits of women’s independent farming to the household.

discussion

Although we have discussed a series of differences in the organization of labor by Kofyar men and women respectively, these are smaller than most of the literature would have led us to expect. Most work on specific crops and tasks and in different labor forms differs little between men and women. We have not found support for the assertions that women farmers tend to work individually more often than men, that they devote any more of their agricultural labor time to working within their households than men, that their work is more evenly spread throughout the agricultural year, or, within the scale of their own production enterprise, that they are disadvantaged in access to labor.

So what distinguishes the Kofyar from those other African farming groups where gender distinctions are more sharply drawn? There is, after all, some crop specificity among the Kofyar: men grow more cereals, women more groundnuts. There is also some task differentiation: men make yam heaps, women brew. Absent, however, is the diversion of women’s time to domestic labor and male expropriation of female labor.

We believe it is because the Kofyar are labor-intensive hoe farmers whose overall system requires high sustained inputs by the entire workforce. The Yoruba men and the Beti women described by Guyer practice *extensive* cultivation (or, in the case of the Kujamaat Jola,

groundnut cultivation is the extensive component of an intensive wet rice agricultural system). Land is not scarce, fields are rotated, overall labor inputs—although not measured—are not described as being as high as the Kofyar, and so the distinctive male and female work routines can emerge. In intensive systems that place a high premium on the interchangeability of men and women workers, with some complementarity of tasks, for maintaining production and securing access to resources and food, these distinctions will not tend to emerge. This pattern sharply contrasts with extensive farming systems with higher rates of labor migration, female-headed households, and male monopoly of cash crops.

But why, given the high demands on labor among the Kofyar, are men not further monopolizing female labor for household production to the exclusion of women's ability to produce independently? Not only are women continuing to farm independently but they are introducing new forms of labor groups that further divert their labor away from household production. The farming friends organization, despite the relatively small number of women involved and the small number of hours diverted to the group, still reaffirms that women could allocate their labor as they chose. We did hear some grumbling from husbands who had begun to complain that the organization took up too much of the women's time. The women were considering cutting back on the frequency of their meetings, but they discussed this without much rancor or haste.

Women's labor and reproductive power are too valuable to the system as a whole, and to their households most particularly, for men to risk alienating them. Women could and did divorce at quite high rates (46 percent of currently married women in the 1984 census were in at least their second marriages [M. P. Stone 1988b]); this kept an effective check on compulsory appropriation of their time and work. There were, after all, no replacements for women such as technological alternatives or outside sources of labor.

We also believe that the patterns of gender equality and the absence of marked social and political differentiation among the Kofyar are enduring social expectations. Although Kofyar women in the hills in the 1960s (Netting 1969) enjoyed few institutionalized roles in political life, they still wielded considerable power over their own labor; this derived from their importance to the small, nonhierarchically organized households, which depended on their role in production and reproduction. Among the Jola subgroups described by Linares (1991), for example, the social organization of agricultural labor varies, not because of differences in the nature of the cropping system as such, but according to whether they have been Islamicized and "Mandingized" or not.

The main difference in the organization of work on independent production and on household fields is the access to household labor. Kofyar women receive very little help from their husbands and from other men within their households.²¹ Despite a proliferation in types of group labor, the Kofyar continue to rely heavily on individual labor and on that of their households, with all the advantages and disadvantages that this may imply for the households and for the individuals within them. Rather than limited access and control over large-scale, public forms of labor, it is access to the informal, day-to-day household labor that limits Kofyar women's independent productive potential. This disadvantage for women is minimized, however, as household heads work to ensure their household labor force and accommodate, as much they can, their resident women's desires for independent incomes. Given Kofyar women's access to group labor, control over their own time and residence, supplementary sources of income, and food and money from the household farm, this disadvantage is further minimized. Given the particular labor requirements and profiles of this form of agricultural intensification, we believe that these complex accommodations between men and women are likely to operate. Such insights, however, are only possible with fine-grained data on the ways in which men and women actually spend their labor time.

As we have argued elsewhere (Netting et al. 1989; G. D. Stone et al. 1990), the incorporation of the Kofyar into a market economy in the plains has not produced the captured peasantry others would expect (Hyden 1980; Shenton 1986). The Kofyar have been assisted in avoiding this fate by the favorable ecology of the Benue valley, their comparatively easy access to land and markets, the gradual adoption of new cash crop varieties without jeopardizing their food supply, attractive producer prices, and the voluntaristic nature of their entry into the market. Also of importance, however, have been the habits of hard work and the knowledge of labor intensification techniques that the Kofyar brought with them from the homelands. An important part of this repertoire of habits and skills is the full involvement of women in the household and extrahousehold agricultural labor force. The introduction of new crops and cash cropping into both household and independent production has not changed this gender division of labor, given the labor-intensive form of agriculture that the Kofyar as a whole have chosen.

notes

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1. In the Jahaly Pacharr project in the Gambia, the definition of new irrigated plots as "household" land under the control of men, and on which female members of the household were expected to donate unpaid labor, created increasing tension and disruption within households (Carney 1988; Carney and Watts 1990). Men and women are seen as fundamentally unequal competitors for often scarce supplies of labor and other resources. See also Whitehead 1981.

2. Guyer has written elsewhere that most evolutionary models are "working with only a very few African innovations in the smallholder sector, such as the plow and animal traction in parts of Central and Southern Africa, [that] could possibly qualify as significant change. Thereby, relevant data may have been altogether omitted" (1991:262).

3. The 1984 population densities in these plain communities were estimated at 99.20 per square kilometer. This represented an almost 300 percent increase since 1963 (24.90 per square kilometer) and was well above the rough cutoff of 60 per square kilometer for adoption of intensive practices identified by Netting (1993).

4. The average household size in 1984 was 8.38 people in the plains, and 50 percent of those households were polygynous (G. D. Stone et al. 1984).

5. Issues surrounding access to land for independent production cannot be dealt with adequately here. Although many of the women's crops (including groundnuts, bambara nuts, sesame, cocoyams, and other minor root crops) could be intercropped in household cereal fields, yams required their own separate allocation of land, and some women expressed a desire for more land for yam cultivation than their husbands had allotted. Women could borrow land from other households and could even rent land (although unofficially). In general terms, however, land shortage did not yet seem to be a problem for women.

6. The issue of the tensions between labor coercion by elders or household heads of dependent household members, and of benefits derived from that labor via redistribution, has been raised by others (see, for example, Saul 1989). The errors of focusing on the labor extraction and neglecting the benefits, however, continue to affect analysis. Nyerges (1992:870), for example, describes Susu work groups of young men spending a considerable portion of their time working for nonmembers, including working for a father, foster father, older brother, or patron. Surely, however, the calculus of labor loss to a relative or patron is different from having one's labor expropriated by a stranger, for example, since at least some of the product of their labor is contributing to their own subsistence, bride wealth, and taxes.

7. We have found in other work that there are considerable differences among different categories of women in the scale of their independent production (M. P. Stone 1988b). Monogamously married women, for example, produce at lower rates and sell less produce than do their polygynous counterparts. There is also considerable variation in different women's ability to attract labor. Some older women, for example, get significant help with their crops through *mar muos*, wage labor, and help from sons, while many younger, newly married women may have access to little but their own labor.

8. Data were collected between late May 1984 and early June 1985, with a two-week break in February during the dry season. Data from the two agricultural seasons are combined into a composite year, and we have adjusted for the two unrecorded weeks. This analysis concerns all tasks related to the growing and storing of crops. Beer brewing labor is included if it is known to have been in preparation for an agricultural

work party. Tasks relating to the processing of crops for consumption or sale, such as millet threshing and peanut shelling, are omitted. This is one of several minor differences between the present analysis and that presented by Stone et al. 1990, which together produce the somewhat lower estimate of total agricultural labor investment.

9. Co-wives also work together on their individual fields. Sometimes the women would call these co-wife groups *wuk* (formalized reciprocal labor group), and the labor records for their household showed a regular rotation among their individual fields. But the women maintained that these were qualitatively different from interhousehold *wuk* and were done as much for fellowship as for efficiency. We do not, therefore, count this as group labor.

10. Members who miss meetings of the *wuk* must return later to work their shares.

11. The *Kofyar* belonged to revolving credit associations that met principally during the dry season. An individual, either male or female, might belong to several such organizations, which were defined by the amount of money each member was obliged to bring to each meeting. Meeting hosts would brew beer for the members at their own cost but would be given the accumulated contributions. The sums were sometimes substantial.

12. The "typical" scheduling of the various types of labor is that the morning is devoted to household fields. Household members often work together as a unit, although household level *wuk* may also meet on household fields. In the afternoon, the household disperses and members attend a *mar muos*, work on their independent fields, attend markets, or even occasionally relax. The household head may continue to work on the household fields in the afternoon. These usual patterns, of course, show considerable variation across the agricultural calendar and by household. Women will not necessarily work on their own crops each day, but may alternate work on their personal fields with cooperative work at other households. As long as women work on the household fields in the morning, the household head has little say over how they spend the rest of their day, although all members of a household sponsoring a *mar muos* would be expected to attend.

13. We have elsewhere (G. D. Stone et al. 1990; M. P. Stone 1988a) distinguished between overall and per capita contributions by women. This distinction derives from the imbalance in the ratio of women to men in our labor sample and in the *Kofyar* population as a whole (the ratio of men to women in our labor sample was 1:1.38; the overall ratio in our household census population of 4,621 was 1:1.36). These figures are overall input, not per capita.

14. The millet, which needs the early rains, is planted as early as possible, even before the field has been ridged. Following the first rainstorm, small mounds are made in rows and the seeds are inserted. After the grains have sprouted, the ridges are completed by hoeing dirt in between the small heaps. The sorghum can then be planted in the ridges. Alternatively, some households make complete ridges in a single operation, but as this demands a large labor input, the bottleneck is diminished by having these alternative methods of cereal cultivation.

15. We categorized cereal processing as domestic rather than as agricultural labor. Most sorghum is left on the stalk until it is pounded in a mortar just before cooking. Millet is more often processed in bulk, with men flailing the grains and women winnowing.

16. Earlier analyses (M. P. Stone 1988a) found that 61 percent of all hours worked were performed by women (54 percent per capita).

17. This male specialization in heap construction has been noted among other West African farming groups (Bohannan 1954 on the Tiv; Etienne 1980 on the Baule; Guyer 1980, 1984 on the Beti; Forde 1964 on the Yako). The *Kofyar* explained male specialization in this task in purely physical terms: molding the heavy earth with large hoes into approximately two cubic foot heaps is very hard work, and men, with their superior strength, could do it faster and for longer times than women.

18. Seventeen percent of men's exchange labor and 16 percent of their beer farming labor is spent working on women's fields. Women devote 27 percent of their exchange labor and 16 percent of their beer farming labor to the fields of other women. The meetings for independent production do tend to be smaller (the average size of *wuk* sponsored by a woman was 10.5 people, while the average household sponsored *wuk* had 14.4 people; similarly, the women's *mar muos* averaged 33 people, the household *mar muos* 51).

19. The ratio of returns on their group labor is therefore higher than it is on their individual labor (that is, for every person hour a woman's crops are worked on by an exchange group, she has spent 2.2 hours working in exchange groups; for every person hour a woman's crops are worked on individually, she has spent 2.9 hours overall working individually).

20. Women spent 63 percent of their brewing hours working outside their own households; about half of that time was for women in other households, the other for the household heads.

21. Although von Braun and Webb (1989) were pointing out the disadvantaged position of women in a Gambian rice irrigation project, men there did spend one third of the time they allocated to individual farming helping women in their private fields. Bassett (1988) describes an instructive case from the cotton belt of Côte d'Ivoire. Women's independent production was most crucially limited by their lack of access to the labor of other household members. The Ivorian women must even ask permission of their household heads for the help of their own children. They gain access to labor in a variety of ways, including the use of reciprocal work groups and daily wage laborers; they may hire their husbands to plow their fields, or they may barter their own labor for plowing.

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